



Massachusetts Department of Environmental Protection
Source Water Assessment and Protection (SWAP) Report
for
Bedford Water Department

What is SWAP?

The Source Water Assessment Protection (SWAP) program, established under the federal Safe Drinking Water Act, requires every state to:

- inventory land uses within the recharge areas of all public water supply sources;
- assess the susceptibility of drinking water sources to contamination from these land uses; and
- publicize the results to provide support for improved protection.

Susceptibility and Water Quality

Susceptibility is a measure of a water supply's potential to become contaminated due to land uses and activities within its recharge area.

A source's susceptibility to contamination does *not* imply poor water quality.

Water suppliers protect drinking water by monitoring for more than 100 chemicals, disinfecting, filtering, or treating water supplies, and using source protection measures to ensure that safe water is delivered to the tap.

Actual water quality is best reflected by the results of regular water tests. To learn more about your water quality, refer to your water supplier's annual Consumer Confidence Reports.

Table 1: Public Water System Information

<i>PWS Name</i>	Bedford Water Department
<i>PWS Address</i>	314 Great Road
<i>City/Town</i>	Bedford, Massachusetts 01730
<i>PWS ID Number</i>	3023000
<i>Local Contact</i>	Peter Churchill - Superintendent
<i>Phone Number</i>	781-275-7605

Introduction

We are all concerned about the quality of the water we drink. Drinking water wells may be threatened by many potential contaminant sources, including storm runoff, road salting, and improper disposal of hazardous materials. Citizens and local officials can work together to better protect these drinking water sources.

Purpose of this report:

This report is a planning tool to support local and state efforts to improve water supply protection. By identifying land uses within water supply protection areas that may be potential sources of contamination, the assessment helps focus protection efforts on appropriate best management practices (BMPs) and drinking water source protection measures.

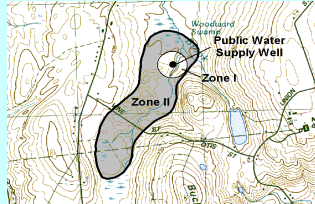
Refer to Table 3 for Recommendations to address potential sources of contamination. Department of Environmental Protection (DEP) staff are available to provide information about funding and other resources that may be available to your community.

This report includes the following sections:

1. Description of the Water System
2. Land Uses within Protection Areas
3. Source Water Protection Conclusions and Recommendations
4. Appendices

What is a Protection Area?

A well's water supply protection area is the land around the well where protection activities should be focused. Each well has a Zone I protective radius and a Zone II protection area.



Glossary

Aquifer: An underground water-bearing layer of permeable material that will yield water in a usable quantity to a well.

Hydrogeologic Barrier: An underground layer of impermeable material (i.e. clay) that resists penetration by water.

IWPA: A 400 foot to ½ mile radius around a public water supply well proportional to its pumping rate; the area DEP recommends for protection in the absence of a defined Zone II. To determine IWPA radius, refer to the attached map.

Recharge Area: The surface area that contributes water to a well.

Zone I: The area closest to a well; a 100 to 400 foot radius proportional to the well's pumping rate. This area should be owned or controlled by the water supplier and limited to water supply activities.

Zone II: The primary recharge area for the aquifer. This area is defined by hydrogeologic studies that must be approved by DEP. Refer to the attached map to determine the land within your Zone II.

Section 1: Description of the Water System

Zone II #: 130

Susceptibility: High

<i>Well Names</i>	<i>Source IDs</i>
Shawsheen Road GP Well #2	3023000-02G
Shawsheen Road GD Well #4	3023000-08G
Shawsheen Road GD Well #5	3023000-09G
Well #6	3023000-04G

Zone II #: 243

Susceptibility: High

<i>Well Names</i>	<i>Source IDs</i>
Hartwell Road Well #10	3023000-10G
Hartwell Road Well #11	3023000-11G
Hartwell Road Well #12	3023000-12G

Zone II #: 244

Susceptibility: High

<i>Well Names</i>	<i>Source IDs</i>
Mitre/Rte. 62 Well #3	3023000-03G
Turnpike GP Well #7	3023000-05G
Turnpike GP Well #8	3023000-06G
Turnpike GP Well #9	3023000-07G

IWPAs:

Susceptibility: High

<i>Well Names</i>	<i>Source IDs</i>
Page School GP Well #1	3023000-01G

The wells for the Bedford Water Department are located within four separate water supply protection areas, with portions extending into the towns of Billerica, Burlington, Concord, Lexington, and Lincoln. Each well has a Zone I radius of 400 feet. The wells are located in aquifers with a high vulnerability to contamination due to the absence of hydrogeologic barriers (i.e. clay) that can prevent contaminant migration. Please refer to the attached map of the Zone II and Interim Wellhead Protection Areas (IWPA). All wells except the Shawsheen Wells are inactive; the Town maintains them in "inactive but protected" status for potential future use.

The Bedford Water Department purchases a portion of its water supply from the Massachusetts Water Resources Authority (MWRA). Attached, please find a copy of the SWAP report prepared for the MWRA sources.

For current information on monitoring results and treatment, please contact the Public Water System contact person listed above in Table 1 for a copy of the most recent Consumer Confidence Report. Drinking water monitoring reporting data is also available on the web at <http://www.epa.gov/safe-water/ccr1.html>

Section 2: Land Uses in the Protection Areas

The Zone IIs and IWPAs for Bedford are a mixture primarily of residential, industrial, and commercial land uses (refer to attached map for details). Land uses and activities that are potential sources of contamination are listed in Table 2, with further detail provided in the Table of Regulated Facilities and Table of Underground Storage Tanks in Appendix B.

Key Land Uses and Protection Issues include:

1. Activities in Zone I
2. Hazardous materials storage and use
3. Residential land uses
4. Transportation corridors
5. Federal Superfund Site and Oil or Hazardous Material Contamination Sites
6. Comprehensive wellhead protection planning

The overall ranking of susceptibility to contamination for the system is high, based on the presence of at least one high threat land use within the water supply protection areas, as seen in Table 2.

1. Activities in Zone Is – The Zone I for each of the wells is a 400 foot radius around the wellhead. Massachusetts drinking water regulations (310 CMR 22.00 Drinking Water) require public water suppliers to own the Zone I, or control the Zone I through a conservation restriction. Only water supply activities are allowed in the Zone I. However, many public water supplies were developed prior to the Department's regulations and contain non-water supply activities such as homes and public roads. The following non-water supply activities occur in the Zone Is of Bedford's wells:

Shawsheen Wells and Well #6: There are several homes within the Zone I of each of the Shawsheen Wells.

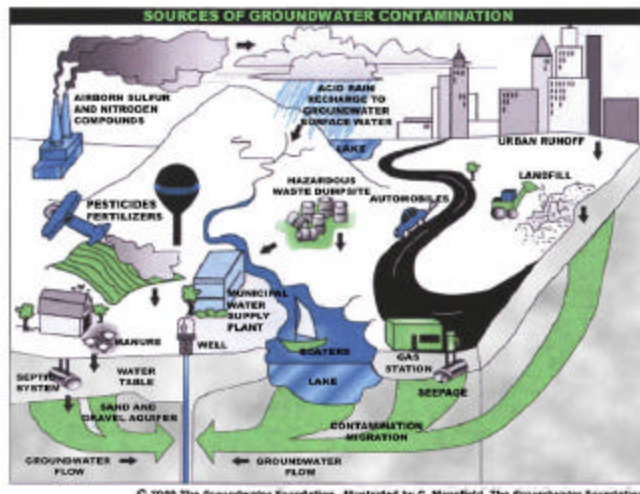
Turnpike Well #9: There are numerous parking spaces within the Zone I of this well.

Page School Well: There is a considerable portion of the school building, numerous parking spaces, athletic fields, and three house lots in the Zone I of this well.

Mitre/Rte. 62 Well #3: There is a portion of an office building, and section of Route 62 in the Zone I of this well.

Zone I Recommendations:

- ✓ Coordinate efforts with landowners to identify the location of septic systems, and if needed, determine the feasibility of relocating septic systems outside of the Zone I
- ✓ To the extent possible, remove all non-water supply activities from the Zone I to comply with DEP's Zone I requirements.
- ✓ Use BMPs for the storage, use, and disposal of hazardous materials such as water supply chemicals and maintenance chemicals.



- ✓ Do not use or store pesticides, fertilizers or road salt within the Zone I.
- ✓ Keep any new non-water supply activities out of the Zone I.

2. Hazardous Materials Storage and Use – Twenty eight percent of the land area within the Zone IIs is commercial or industrial land uses. Many small businesses and industries use hazardous materials, produce hazardous waste products, and/or store large quantities of hazardous materials in Underground Storage Tanks (USTs) and Aboveground Storage Tanks (ASTs). If hazardous materials are improperly stored, used, or disposed, they become potential sources of contamination. Hazardous materials should never be disposed of to a septic system or floor drain leading directly to the ground.

Benefits of Source Protection

Source Protection helps protect public health and is also good for fiscal fitness:

- Protects drinking water quality at the source
- Reduces monitoring costs through the DEP Waiver Program
- Treatment can be reduced or avoided entirely, saving treatment costs
- Prevents costly contamination clean-up
- Preventing contamination saves costs on water purchases, and expensive new source development

Contact your regional DEP office for more information on Source Protection and the Waiver Program.

Hazardous Materials Storage and Use Recommendations:

- ✓ Educate local businesses on best management practices for protecting water supplies. Distribute the fact sheet “Businesses Protect Drinking Water” available in Appendix A and on www.mass.gov/dep/brp/dws/protect.htm, which provides BMP’s for common business issues.
- ✓ Work with local businesses to register those facilities that are unregistered generators of hazardous waste or waste oil. Partnerships between businesses, water suppliers, and communities enhance successful public drinking water protection practices.
- ✓ Educate local businesses on Massachusetts floordrain requirements. See brochure “Industrial Floor Drains” for more information.

What are "BMPs?"

Best Management Practices (BMPs) are measures that are used to protect and improve surface water and groundwater quality. BMPs can be structural, such as oil & grease trap catch basins, nonstructural, such as hazardous waste collection days or managerial, such as employee training on proper disposal procedures.

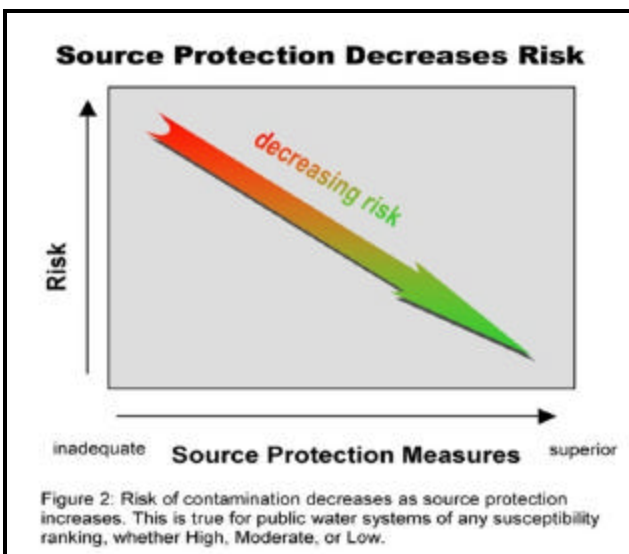
3. Residential Land Uses – Approximately 60% of the combined Zone IIs and IWPA's consist of residential areas, some of which are still served by private septic systems. If managed improperly, activities associated with residential areas can contribute to drinking water contamination. Common potential sources of contamination include:

- **Septic Systems** – Improper disposal of household hazardous chemicals to septic systems is a potential source of contamination to the groundwater because septic systems lead to the ground. If septic systems fail or are not properly maintained they can be a potential source of microbial contamination.
- **Household Hazardous Materials** - Hazardous materials may include automotive wastes, paints, solvents, pesticides, fertilizers, and other substances. Improper use, storage, and disposal of chemical products used in homes are potential sources of contamination.
- **Heating Oil Storage** - If managed improperly, Underground and Aboveground Storage Tanks (USTs and ASTs) can be potential sources of contamination due to leaks or spills of the fuel oil they store.
- **Stormwater** – Catch basins transport stormwater from roadways and adjacent properties to the ground. As flowing stormwater travels, it picks up debris and contaminants from streets and lawns. Common potential contaminants include lawn chemicals, pet waste, and contaminants from automotive leaks, maintenance, washing, or accidents.

Residential Land Use Recommendations:

- ✓ Educate residents on best management practices (BMPs) for protecting water supplies. Distribute the fact sheet “Residents Protect Drinking Water” available in Appendix A and on www.mass.gov/dep/brp/dws/protect.htm, which provides BMPs for common residential issues.
- ✓ Work with planners to control new residential developments in the water supply protection areas.
- ✓ Promote BMPs for stormwater management and pollution controls.

4. Transportation Corridors - Local roads are common throughout the Zone IIs. Roadway construction, maintenance, and typical highway use can all be potential sources of contamination. Accidents can lead to spills of gasoline and other potentially dangerous transported chemicals. Roadways are frequent sites for illegal dumping of hazardous or other



potentially harmful wastes. De-icing salt, automotive chemicals and other debris on roads are picked up by stormwater and wash into catchbasins.

Transportation Corridor Recommendations:

- ✓ Identify stormwater drains and the drainage system along transportation corridors. Work to better manage stormwater by pre-treating contaminated stormwater and/or redirecting stormwater outside of the Zone II.
- ✓ Work with the Town and State to have catch basins inspected, maintained, and cleaned on a regular schedule. Street sweeping reduces the amount of potential contaminants in runoff.
- ✓ If storm drainage maps are available, review the maps with emergency response teams. If maps aren't yet available, work with town officials to investigate mapping options such as the upcoming Phase II Stormwater Rule requiring some communities to complete stormwater mapping.

Potential Source of Contamination vs. Actual Contamination

The activities listed in Table 2 are those that typically use, produce, or store contaminants of concern, which, if managed improperly, are potential sources of contamination (PSC).

It is important to understand that a release may never occur from the potential source of contamination provided facilities are using best management practices (BMPs). If BMPs are in place, the actual risk may be lower than the threat ranking identified in Table 2. Many potential sources of contamination are regulated at the federal, state and/or local levels, to further reduce the risk.

Table 2: Land Use in the Protection Areas (Zones I and II)

For more information, refer to Appendix B: Regulated Facilities within the Water Supply Protection Area

Activities	Quantity	Threat*	Zone II #/ Source ID#	Potential Source of Contamination
Agricultural				
Fertilizer Storage or Use	Numerous	M	130, 243, 01G	Leaks, spills, improper handling, or over-application of fertilizers
Landscaping	1	M	130, 01G	Leaks, spills, improper handling, or over-application of fertilizers and pesticides
Manure Storage or Spreading	2	H	243	Improper handling of manure (microbial contaminants)
Nurseries	1	M	243	Leaks, spills, improper handling, or over-application of fertilizers, pesticides, and other chemicals
Pesticide Storage or Use	Numerous	H	130, 243, 01G	Leaks, spills, improper handling, or over-application of pesticides
Commercial				
Airports	1	H	243	Spills, leaks, or improper handling of fuels, de-icers, salt, and other hazardous chemicals
Car/Truck/Bus Washes	1	L	130, 01G	Improper management of vehicle wash water; soaps; oils; greases; metals; salts
Body Shops	1	H	244	Improper management of vehicle paints, solvents, and primer products
Gas Stations	2	H	130, 244, 01G	Spills, leaks, or improper handling or storage of automotive fluids and fuels
Service Stations/ Auto Repair Shops	7	H	130, 244, 01G	Spills, leaks, or improper handling of automotive fluids, and solvents
Bus and Truck Terminals	5	H	244	Spills, leaks, or improper handling of fuels and maintenance chemicals
Cemeteries	1	M	130, 01G	Leaks, spills, improper handling, or over-application of pesticides; historic embalming fluids (such as arsenic)
Dry Cleaners	1	H	130, 01G	Spills, leaks, or improper handling of solvents and wastes
Funeral Homes	2	L	130, 244, 01G	Spills, leaks, or improper handling of hazardous chemicals

Activities	Quantity	Threat*	Zone II #/ Source ID#	Potential Source of Contamination
Commercial				
Nursing Homes	1	L	130, 01G	Microbial contaminants
Paint Shops	1	H	130, 01G	Spills, leaks, or improper handling or storage of paints, solvents, other chemicals
Research Laboratories	3	M	243, 244	Spills, leaks, or improper handling or storage of laboratory chemicals and wastes
Industrial				
Electronics/Electrical Manufacturers	3	H	243, 244	Spills, leaks, or improper handling or storage of chemicals and process wastes
Hazardous Materials Storage	3	H	244	Spills, leaks, or improper handling or storage of hazardous materials
Hazardous Waste Storage, Treatment and Recycling	1	H	243	Spills, leaks, or improper handling or storage of hazardous materials
Industry/Industrial Parks	Numerous	H	244	Spills, leaks, or improper handling or storage of industrial chemicals and metals
Pharmaceutical Manufacturers	1	H	244	Spills, leaks, or improper handling and or storage of chemicals
Residential				
Fuel Oil Storage (at residences)	Numerous	M	130, 243, 244, 01G	Spills, leaks, or improper handling of fuel oil
Lawn Care / Gardening	Numerous	M	130, 243, 244, 01G	Over-application or improper storage and disposal of pesticides and fertilizers
Septic Systems / Cesspools	Numerous	M	243	Microbial contaminants, and improper disposal of hazardous chemicals
Miscellaneous				
Aboveground Storage Tanks	5	M	244	Spills, leaks, or improper handling of materials stored in tanks
Aquatic Wildlife	1	L	244	Microbial contaminants
Composting Facilities	1	L	130, 01G	Storage and improper handling of organic material, animal waste, and runoff
Large Quantity Hazardous Waste	1	H	130	Spills, leaks, or improper handling or storage of hazardous materials and waste
Military Facilities (Past And Present) Type: <u>Air base</u>	1	H	243	Spills, leaks, or improper handling or storage of fuel, chemicals, pesticides and herbicides, and other materials; may include ordnance or waste landfill/ dump sites

Activities	Quantity	Threat*	Zone II #/ Source ID#	Potential Source of Contamination
Miscellaneous				
NPDES Locations	4	L	130, 01G	Improper disposal of hazardous material and wastes
Oil or Hazardous Material Sites	12	--	130, 244, 01G	Tier Classified Oil or Hazardous Materials Sites are not ranked due to their site-specific character. Individual sites are identified in Appendix B.
Road And Maintenance Depots	2	M	130, 244, 01G	Spills, leaks, or improper handling or storage of deicing materials, automotive fluids, fuel storage, and other chemicals
Schools, Colleges, and Universities	1	M	243	Spills, leaks, or improper handling or storage of fuel oil, laboratory, art, photographic, machine shop, and other chemicals
Small quantity hazardous waste generators	13	M	130, 243, 244, 01G	Spills, leaks, or improper handling or storage of hazardous materials and waste
Stormwater Drains/ Retention Basins	Numerous	L	130, 243, 244, 01G	Debris, pet waste, and chemicals in stormwater from roads, parking lots, and lawns
Superfund Sites	1	H	243	Spills, leaks, or improper handling or storage of oil or hazardous materials and waste
Transmission Line Rights-of-Way Type: <u>gas</u>	2	L	244	Construction and corridor maintenance, over-application or improper handling of herbicides
Transportation Corridors	5	M	130, 243, 244, 01G	Accidental leaks or spills of fuels and other hazardous materials, over-application or improper handling of pesticides
Underground Storage Tanks	32	H	130, 243, 244, 01G	Spills, leaks, or improper handling of stored materials
Utility Substation Transformers	1	L	244	Spills, leaks, or improper handling of chemicals and other materials including PCBs
Very Small Quantity Hazardous Waste Generator	24	L	130, 243, 244, 01G	Spills, leaks, or improper handling or storage of hazardous materials and waste
Notes: <ol style="list-style-type: none"> When specific potential contaminants are not known, typical potential contaminants or activities for that type of land use are listed. Facilities within the watershed may not contain all of these potential contaminant sources, may contain other potential contaminant sources, or may use Best Management Practices to prevent contaminants from reaching drinking water supplies. For more information on regulated facilities, refer to Appendix B: Regulated Facilities within the Water Supply Protection Area information about these potential sources of contamination. For information about Oil or Hazardous Materials Sites in your protection areas, refer to Appendix C: Tier Classified Oil and/or Hazardous Material Sites. <ul style="list-style-type: none"> THREAT RANKING - The rankings (high, moderate or low) represent the relative threat of each land use compared to other PSCs. The ranking of a particular PSC is based on a number of factors, including: the type and quantity of chemicals typically used or generated by the PSC; the characteristics of the contaminants (such as toxicity, environmental fate and transport); and the behavior and mobility of the pollutants in soils and groundwater. 				

- ✓ Work with local emergency response teams to ensure that any spills within the Zone II can be effectively contained.
- ✓ Work with local officials during their review of the railroad right of way Yearly Operating Plans to ensure that water supplies are protected during vegetation control.

5. Presence of Federal Superfund Site and Oil or Hazardous Material Contamination Sites – The Zone II for the Hartwell Road Wells contains two United States Environmental Protection Agency (USEPA) Superfund Sites that are associated with DEP Tier Classified Oil and/or Hazardous Material Release Sites indicated on the map as Release Tracking Numbers 3-0000223, 3-0002611, 3-0011385, 3-0003097 and 30018677. The Zone IIs also contain DEP Tier Classified Oil and/or Hazardous Material Release Sites indicated on the maps as Release Tracking Numbers 3-0000265, 3-0000588, 3-0000698, 30001341, 3 0002367, 3-0002407, 3-0003526, 3-0003798, 3-0012151, 3-0014582, 3-0015492, 0017283, 3-0017578, and 3-0018661. Refer to the attached map and Appendix 3 for more information.

The Superfund Sites may have been partial contributors to the historic contamination at the Hartwell Road Wells.

Federal Superfund Site and Oil or Hazardous Material Contamination Sites Recommendation:

- ✓ Monitor progress on any ongoing remedial action conducted for the known oil or contamination sites.

Top 5 Reasons to Develop a Local Wellhead Protection Plan

- ❶ Reduces Risk to Human Health
- ❷ Cost Effective! Reduces or Eliminates Costs Associated With:
 - ♦ Increased groundwater monitoring and treatment
 - ♦ Water supply clean up and remediation
 - ♦ Replacing a water supply
 - ♦ Purchasing water
- ❸ Supports municipal bylaws, making them less likely to be challenged
- ❹ Ensures clean drinking water supplies for future generations
- ❺ Enhances real estate values – clean drinking water is a local amenity. A community known for its great drinking water in a place people want to live and businesses want to locate.

What is a Zone III?

A Zone III (the secondary recharge area) is the land beyond the Zone II from which surface and ground water drain to the Zone II and is often coincident with a watershed boundary.

The Zone III is defined as a secondary recharge area for one or both of the following reasons:

1. The low permeability of underground water bearing materials in this area significantly reduces the rate of groundwater and potential contaminant flow into the Zone II.
2. The groundwater in this area discharges to a surface water feature such as a river, rather than discharging directly into the aquifer.

The land uses within the Zone III are assessed only for sources that are shown to be groundwater under the direct influence of surface water.

6. Protection Planning – Bedford has water supply protection controls that meet DEP's Wellhead Protection regulations 310 CMR 22.21(2). Protection planning protects drinking water by managing the land area that supplies water to a well. A Wellhead Protection Plan coordinates community efforts, identifies protection strategies, establishes a timeframe for implementation, and provides a forum for public participation. There are resources available to help communities develop a plan for protecting drinking water supply wells.

Protection Planning Recommendations:

- ✓ Occasionally update the Town's Wellhead Protection Plan. Establish a protection team, and refer them to <http://mass.gov/dep/brp/dws/protect.htm> for a copy of DEP's guidance, "Developing a Local Wellhead Protection Plan".
- ✓ Coordinate efforts with local officials to compare local wellhead protection controls with current MA Wellhead Protection Regulations 310 CMR 22.21 (2). Occasionally update local controls to meet changes in current regulations. For more information on DEP land use controls see <http://mass.gov/dep/brp/dws/protect.htm>.
- ✓ If local controls do not regulate floordrains, be sure to include floordrain controls that meet 310 CMR 22.21(2).

Other land uses and activities within the Zone II that are potential sources of contamination are included in Table 2. Refer to Appendix B for more information about these land uses. Identifying potential sources of contamination is an important initial step in protecting your drinking water sources. Further local investigation will provide more in-depth information and may identify new land uses and activities that are potential sources of contamination. Once potential sources of contamination are identified, specific recommendations like those below should be used to better protect your water supply.

Table 3: Current Protection and Recommendations

Protection Measures	Status	Recommendations
Zone I		
Does the Public Water Supplier (PWS) own or control the entire Zone I?	YES (Hartwell Road Wells)	Follow Best Management Practices (BMP's) that focus on good housekeeping, spill prevention, and operational practices to reduce the use and release of hazardous materials.
	NO (Shawsheen Wells, Well #6, Turnpike Wells, Page School Well, Well #3)	To the extent possible, remove non-water supply activities from each Zone I to comply with DEP's Zone I requirements. Investigate options for gaining ownership or control of the Zone I for groundwater sources.
Is the Zone I posted with "Public Drinking Water Supply" Signs?	All but the Page School Well	Post Page School Well with "Public Drinking Water Supply" signs until such time that it is officially abandoned. Additional economical signs are available from the Northeast Rural Water Association (802) 660-4988.
Is Zone I regularly inspected?	All but the Page School Well	Inspect the Zone I of Page School Well until such time that it is officially abandoned. Also, continue daily inspections of drinking water protection areas.
Are water supply -related activities the only activities within the Zone I?	YES (Hartwell Road Wells)	Continue monitoring for non-water supply activities in Zone Is.
	NO (Shawsheen Wells, Well #6, Turnpike Wells, Page School Well, Well #3)	Monitor non-water supply activities in Zone I, and investigate options for removing these activities.
Municipal Controls (Zoning Bylaws, Health Regulations, and General Bylaws)		
Does the municipality have Wellhead Protection Controls that meet 310 CMR 22.21(2)?	YES	The Town's bylaw meets DEP's requirements for wellhead protection. Refer to www.state.ma.us/dep/brp/dws/ for model bylaws and health regulations, and current regulations.
Do neighboring communities protect the Zone II areas extending into their communities?	SOME	Burlington, Concord, and Lexington have adopted land use controls that include Bedford's source protection areas. Work with Billerica and Lincoln to include Bedford's Zone IIs in their wellhead protection controls.
Planning		
Does the PWS have a Wellhead Protection Plan?	YES	Update plan to reflect changes in source protection measures. Follow "Developing a Local Wellhead Protection Plan" available at: www.state.ma.us/dep/brp/dws/ .
Does the PWS have a formal "Emergency Response Plan" to deal with spills or other emergencies?	NO	Develop a joint emergency response plan with fire department, Board of Health, DPW, and local and state emergency officials. Coordinate emergency response drills with local teams.
Does the municipality have a wellhead protection committee?	YES	Encourage representatives from citizens' groups, neighboring communities, and the business community to participate in committee.
Does the Board of Health conduct inspections of commercial and industrial activities?	YES	Continue with Bedford's Hazardous Materials Contingency Plan program. For more guidance see "Hazardous Materials Management: A Community's Guide" at www.state.ma.us/dep/brp/dws/files/hazmat.doc
Does the PWS provide wellhead protection education?	SOME	Currently, the only outreach is through the annual Consumer Confidence Report. Increase residential outreach through bill stuffers, school programs, Drinking Water Week activities, and coordination with local groups. Aim additional efforts at commercial, industrial and municipal uses within the Zone II.

Section 3: Source Water Protection Conclusions and Recommendations

Current Land Uses and Source Protection:

As with many water supply protection areas, the system Zone IIs contain potential sources of contamination. However, source protection measures reduce the risk of actual contamination, as illustrated in Figure 2. Bedford is commended for taking an active role in promoting source protection measures in the Water Supply Protection Areas through:

- Adopting a local bylaw for the control and management of hazardous materials. This bylaw is implemented through the Board of Health, with additional inspection support from the Fire Department. It requires local businesses to develop a hazardous material contingency and training plan.
- Purchasing sixteen (16) acres that abuts the Zone I for the Shawsheen Wells.
- Adopting a local bylaw that meets DEP's prohibited land uses within a Zone II.

Source Protection Recommendations:

To better protect the sources for the future:

- ✓ Inspect the Zone I regularly, and when feasible, remove any non-water supply activities.
- ✓ Educate residents on ways they can help you to protect drinking water sources.
- ✓ Work with emergency response teams to ensure that they are aware of the stormwater drainage in your Zone II and to cooperate on responding to spills or accidents.
- ✓ Partner with local businesses to ensure the proper storage, handling, and disposal of hazardous materials.
- ✓ Monitor progress on any ongoing remedial action conducted for the known oil or contamination sites.
- ✓ Develop and implement a Wellhead Protection Plan.

Conclusions:

These recommendations are only part of your ongoing local drinking water source protection. Additional source protection recommendations are listed in Table 3, the Key Issues above and Appendix A.

DEP staff, informational documents, and resources are available to help you build on this SWAP report as you continue to improve drinking water protection in your community. The Department's Wellhead Protection Grant Program and Source Protection Grant Program provide funds to assist public water suppliers in addressing water supply source protection through local projects. Protection recommendations discussed in this document may be eligible for funding under the Grant Program. Please note: each spring DEP posts a new Request for Response for the grant program (RFR).

Other grants and loans are available through the Drinking Water State Revolving Loan Fund, the Clean Water State Revolving Fund, and other sources. For more information on grants and loans, visit the Bureau of Resource Protection's Municipal Services web site at: <http://mass.gov/dep/brp/mf/mfpubs.htm>.

The assessment and protection recommendations in this SWAP report are provided as a tool to encourage community discussion, support ongoing source protection efforts, and help set local drinking water protection priorities. Citizens and community officials should use this SWAP report to spur discussion of local drinking water protection measures. The water supplier should supplement this SWAP report with local information on potential sources of contamination

Additional Documents:

To help with source protection efforts, more information is available by request or online at mass.gov/dep/brp/dws including:

1. Water Supply Protection Guidance Materials such as model regulations, Best Management Practice information, and general water supply protection information.
2. MA DEP SWAP Strategy
3. Land Use Pollution Potential Matrix
4. Draft Land/Associated Contaminants Matrix

For More Information

Contact Anita Wolovick in DEP's Wilmington Office at (978) 661-7768 for more information and assistance on improving current protection measures.

Copies of this report have been provided to the public water supplier, board of health, and the town.

and land uses. Local information should be maintained and updated periodically to reflect land use changes in the Zone II. Use this information to set priorities, target inspections, focus education efforts, and to develop a long-term drinking water source protection plan.

Section 4: Appendices

- A. Protection Recommendations
- B. Regulated Facilities within the Water Supply Protection Area
- C. Table of Tier Classified Oil and/or Hazardous Material Sites within the Water Supply Protection Areas
- D. Additional Documents on Source Protection

APPENDIX A: DEP PERMITTED FACILITIES WITHIN BEDFORD'S WATER SUPPLY PROTECTION AREAS

DEP FACILITY NUMBER	FACILITY NAME	STREET ADDRESS	TOWN	PERMITTED ACTIVITY	ACTIVITY CLASS
357405	AFFYMETRIX INC	4G CROSBY DR	BEDFORD	HANDLER	VERY SMALL QUANTITY GENERATOR
357405	AFFYMETRIX INC	4G CROSBY DR	BEDFORD	HANDLER	VERY SMALL QUANTITY GENERATOR - WASTE OIL/PCBS ONLY
205026	ATEX INC	32 WIGGINS AVE	BEDFORD	HANDLER	VERY SMALL QUANTITY GENERATOR
230319	BEDROCK CONSTRUCTION	198 CONCORD RD	BEDFORD	HANDLER	VERY SMALL QUANTITY GENERATOR
31941	COMPUTERVISION CORP	100 CROSBY DR	BEDFORD	HANDLER	VERY SMALL QUANTITY GENERATOR
215637	EKTRON APPLIED IMAGING INC	23 CROSBY DR	BEDFORD	HANDLER	VERY SMALL QUANTITY GENERATOR
126407	EXXON CO USA 35681	349 THE GREAT RD	BEDFORD	HANDLER	VERY SMALL QUANTITY GENERATOR
317340	HOLOGIC INC	35 CROSBY DR	BEDFORD	HANDLER	SMALL QUANTITY GENERATOR - WASTE OIL/PCBS ONLY
133414	JIFFY LUBE	331 GREAT RD	BEDFORD	HANDLER	LARGE QUANTITY GENERATOR - WASTE OIL/PCBS ONLY
133414	JIFFY LUBE	331 GREAT RD	BEDFORD	HANDLER	VERY SMALL QUANTITY GENERATOR
294158	LUONGOS DRY CLEANERS INC	32 SHAWSHEEN AVENUE	BEDFORD	HANDLER	VERY SMALL QUANTITY GENERATOR
287376	MEDISENSE INCORPORATED	4 CROSBY DR	BEDFORD	DISCHARGE	MWRA SEWER CONNECTION

DEP FACILITY NUMBER	FACILITY NAME	STREET ADDRESS	TOWN	PERMITTED ACTIVITY	ACTIVITY CLASS
207374	MITRE CORP THE	202 BURLINGTON RD	BEDFORD	HANDLER	SMALL QUANTITY GENERATOR
287378	POLAROID CORPORATION	201 BURLINGTON RD	BEDFORD	DISCHARGE	MWRA SEWER CONNECTION
357802	POLAROID GRAPHICS IMAGING LLC	6 CROSBY DR	BEDFORD	HANDLER	SMALL QUANTITY GENERATOR
339580	PRE OWNED ELECTRONICS INC	125 MIDDLESEX TURNPIKE	BEDFORD	DISCHARGE	MWRA SEWER CONNECTION
31387	RAYTHEON ELECTRONIC SYSTEMS RES	HARTWELL RD - SYSTEMS BLDG	BEDFORD	HANDLER	SMALL QUANTITY GENERATOR
325264	SHELL 137706	358 GREAT RD	BEDFORD	FUEL DISPENSER	FUEL DISPENSER
342359	TERADYNE INC	26 CROSBY DRIVE	BEDFORD	HANDLER	VERY SMALL QUANTITY GENERATOR - WASTE OIL/PCBS ONLY
364377	TOSCO EXXON 2634702	349 GREAT RD	BEDFORD	FUEL DISPENSER	FUEL DISPENSER
36078	A M A TRANSPORTATION CO INC	28 PLANK ST	BILLERICA	HANDLER	VERY SMALL QUANTITY GENERATOR
133455	HILLQUIST W K INC	35 DUNHAM RD	BILLERICA	HANDLER	SMALL QUANTITY GENERATOR - WASTE OIL/PCBS ONLY
34908	NEW ENGLAND MOTOR FREIGHT CO INC	9 DUNHAM RD	BILLERICA	HANDLER	VERY SMALL QUANTITY GENERATOR
329030	PREPRESS SOLUTIONS INC	29 DUNHAM ROAD	BILLERICA	HANDLER	SMALL QUANTITY GENERATOR
300518	RYDER TRANSPORTATION SERVICES	1 DUNHAM RD	BILLERICA	HANDLER	VERY SMALL QUANTITY GENERATOR

DEP FACILITY NUMBER	FACILITY NAME	STREET ADDRESS	TOWN	PERMITTED ACTIVITY	ACTIVITY CLASS
300522	SPECTRUM PRINTING & GRAPHICS	31 DUNHAM RD	BILLERICA	HANDLER	SMALL QUANTITY GENERATOR
300522	SPECTRUM PRINTING & GRAPHICS	31 DUNHAM RD	BILLERICA	HANDLER	VERY SMALL QUANTITY GENERATOR - WASTE OIL/PCBS ONLY
135845	BURLINGTON TEXACO	161 BEDFORD ST	BURLINGTON	HANDLER	VERY SMALL QUANTITY GENERATOR
135845	BURLINGTON TEXACO	161 BEDFORD ST	BURLINGTON	FUEL DISPENSER	FUEL DISPENSER
30599	DOBBINS AUTO REPAIR	177 BEDFORD ST	BURLINGTON	HANDLER	VERY SMALL QUANTITY GENERATOR
133590	EG&G INTERNATIONAL INC	217 MIDDLESEX TNPK	BURLINGTON	HANDLER	VERY SMALL QUANTITY GENERATOR
27566	FILM MICROELECTRONICS	17 A ST	BURLINGTON	HANDLER	VERY SMALL QUANTITY GENERATOR
27566	FILM MICROELECTRONICS	17 A ST	BURLINGTON	HANDLER	VERY SMALL QUANTITY GENERATOR - WASTE OIL/PCBS ONLY
208445	GALAXIE LAB INC	18 A ST	BURLINGTON	HANDLER	SMALL QUANTITY GENERATOR
130450	GOODWAY GRAPHICS OF MASS INC	16 A ST	BURLINGTON	HANDLER	SMALL QUANTITY GENERATOR
130450	GOODWAY GRAPHICS OF MASS INC	16 A ST	BURLINGTON	HANDLER	VERY SMALL QUANTITY GENERATOR - WASTE OIL/PCBS ONLY
132537	MILLIPORE CORP MILLIGEN DIV	186 MIDDLESEX TNPK	BURLINGTON	HANDLER	VERY SMALL QUANTITY GENERATOR
215009	MOBIL OIL CORP SS PPY	173 BEDFORD ST	BURLINGTON	HANDLER	VERY SMALL QUANTITY GENERATOR

DEP FACILITY NUMBER	FACILITY NAME	STREET ADDRESS	TOWN	PERMITTED ACTIVITY	ACTIVITY CLASS
215009	MOBIL OIL CORP SS PPY	173 BEDFORD ST	BURLINGTON	HANDLER	SMALL QUANTITY GENERATOR - WASTE OIL/PCBS ONLY
215009	MOBIL OIL CORP SS PPY	173 BEDFORD ST	BURLINGTON	FUEL DISPENSER	FUEL DISPENSER
358001	NEUBER INDUSTRIAL DIAMOND CO	10 B ST	BURLINGTON	HANDLER	VERY SMALL QUANTITY GENERATOR - WASTE OIL/PCBS ONLY
32739	NIXDORF COMPUTER CORP	23 FOURTH AVE	BURLINGTON	HANDLER	VERY SMALL QUANTITY GENERATOR
335293	O SULLIVAN KENNEDY	157 BEDFORD STREET	BURLINGTON	HANDLER	SMALL QUANTITY GENERATOR - WASTE OIL/PCBS ONLY
343664	SURMET CORPORATION	33 B STREET	BURLINGTON	HANDLER	SMALL QUANTITY GENERATOR
364387	TOSCO EXXON 2634718	181 CAMBRIDGE ST	BURLINGTON	FUEL DISPENSER	FUEL DISPENSER
358318	TOSCO REFINING LP	181 CAMBRIDGE ST	BURLINGTON	HANDLER	SMALL QUANTITY GENERATOR - WASTE OIL/PCBS ONLY
296062	DRAPER LABORATORY SPECIAL TEST FACILITY	711 VIRGINIA RD	CONCORD	PLANT	BELOW AQ REGULATED THRESHOLDS

UNDERGROUND STORAGE TANKS WITHIN BEDFORD'S WATER SUPPLY PROTECTION AREAS

FACILITY NAME	ADDRESS	TOWN	DESCRIPTION	CAPACITY (GAL)	CONTENTS
BEDFORD DPW GARAGE	314 GREAT ROAD	BEDFORD	ROAD & MAINTENANCE DEPOT	5000	FUEL OIL
BEDFORD DPW GARAGE	314 GREAT ROAD	BEDFORD	ROAD & MAINTENANCE DEPOT	6000	GASOLINE
BEDFORD DPW GARAGE	314 GREAT ROAD	BEDFORD	ROAD & MAINTENANCE DEPOT	6000	DIESEL
VERIZON	70 PAGE ROAD	BEDFORD	UTILITY	4000	KEROSENE
SEWER PUMPING STATION	299 GREAT ROAD	BEDFORD	MUNICIPAL	1500	DIESEL
SHAWSHEEN WELLFIELD	131 SHAWSHEEN ROAD	BEDFORD	PUBLIC WATER SUPPLY	1500	POTASSIUM HYDROXIDE
SHELL SERVICE STATION	358 GREAT ROAD	BEDFORD	GAS STATION	10000	GASOLINE
SHELL SERVICE STATION	358 GREAT ROAD	BEDFORD	GAS STATION	10000	GASOLINE
SHELL SERVICE STATION	358 GREAT ROAD	BEDFORD	GAS STATION	10000	GASOLINE
MITRE CORPORATION	202 BURLINGTON ROAD	BEDFORD	ELECTRONICS	20000	FUEL OIL
MITRE CORPORATION	202 BURLINGTON ROAD	BEDFORD	ELECTRONICS	5000	FUEL OIL
MITRE CORPORATION	202 BURLINGTON ROAD	BEDFORD	ELECTRONICS	5000	FUEL OIL

FACILITY NAME	ADDRESS	TOWN	DESCRIPTION	CAPACITY (GAL)	CONTENTS
MITRE CORPORATION	202 BURLINGTON ROAD	BEDFORD	ELECTRONICS	2000	FUEL OIL
TOSCO EXXON	349 GREAT ROAD	BEDFORD	GAS STATION	12000	GASOLINE
TOSCO EXXON	349 GREAT ROAD	BEDFORD	GAS STATION	10000	GASOLINE
TOSCO EXXON	349 GREAT ROAD	BEDFORD	GAS STATION	10000	GASOLINE
AMA TRANSPORTATION	28 PLANK STREET	BILLERICA	TRUCK TERMINAL	10000	DIESEL
NEW ENGLAND WHEELS	50 DUNHAM ROAD	BILLERICA		10000	GASOLINE
NEW ENGLAND WHEELS	50 DUNHAM ROAD	BILLERICA		10000	GASOLINE
BURLINGTON TEXICO	161 BEDFORD STREET	BURLINGTON	SERVICE STATION	12000	GASOLINE
BURLINGTON TEXICO	161 BEDFORD STREET	BURLINGTON	SERVICE STATION	10000	GASOLINE
BURLINGTON TEXICO	161 BEDFORD STREET	BURLINGTON	SERVICE STATION	10000	DIESEL
MOBIL SERVICE STATION	173 BEDFORD STREET	BURLINGTON	SERVICE STATION	10000	GASOLINE
MOBIL SERVICE STATION	173 BEDFORD STREET	BURLINGTON	SERVICE STATION	8000	GASOLINE
MOBIL SERVICE STATION	173 BEDFORD STREET	BURLINGTON	SERVICE STATION	6000	GASOLINE

FACILITY NAME	ADDRESS	TOWN	DESCRIPTION	CAPACITY (GAL)	CONTENTS
MOBIL SERVICE STATION	173 BEDFORD STREET	BURLINGTON	SERVICE STATION	550	WASTE OIL
TOSCO EXXON	181 CAMBRIDGE STREET	BURLINGTON	SERVICE STATION	10000	GASOLINE
TOSCO EXXON	181 CAMBRIDGE STREET	BURLINGTON	SERVICE STATION	10000	GASOLINE
TOSCO EXXON	181 CAMBRIDGE STREET	BURLINGTON	SERVICE STATION	10000	GASOLINE
TOSCO EXXON	181 CAMBRIDGE STREET	BURLINGTON	SERVICE STATION	1000	WASTE OIL
MIT LINCOLN LAB FLIGHT FACILITY	711 VIRGINIA ROAD	CONCORD	RESEARCH LABORATORY	6000	FUEL OIL
MIT LINCOLN LAB FLIGHT FACILITY	711 VIRGINIA ROAD	CONCORD	RESEARCH LABORATORY	4000	FUEL OIL
MIT LINCOLN LAB FLIGHT FACILITY	711 VIRGINIA ROAD	CONCORD	RESEARCH LABORATORY	1000	GASOLINE

For more information on underground storage tanks, visit the Massachusetts Department of Fire Services web site: <http://www.state.ma.us/dfs/ust/ustHome.htm>

Note: This appendix includes only those facilities within the water supply protection area(s) that meet state reporting requirements and report to the appropriate agencies. Additional facilities located within the water supply protection area(s) should be considered in local drinking water source protection planning.

APPENDIX B – Table of Tier Classified Oil and/or Hazardous Material Sites within Bedford Water Supply Protection Areas

DEP's datalayer depicting oil and/or hazardous material (OHM) sites is a statewide point data set that contains the approximate location of known sources of contamination that have been both reported and classified under Chapter 21E of the Massachusetts General Laws. Location types presented in the layer include the approximate center of the site, the center of the building on the property where the release occurred, the source of contamination, or the location of an on-site monitoring well. Although this assessment identifies OHM sites near the source of your drinking water, the risks to the source posed by each site may be different. The kind of contaminant and the local geology may have an effect on whether the site poses an actual or potential threat to the source.

The DEP's Chapter 21E program relies on licensed site professionals (LSPs) to oversee cleanups at most sites, while the DEP's Bureau of Waste Site Cleanup (BWSC) program retains oversight at the most serious sites. This privatized program obliges potentially responsible parties and LSPs to comply with DEP regulations (the Massachusetts Contingency Plan – MCP), which require that sites within drinking water source protection areas be cleaned up to drinking water standards.

For more information about the state's OHM site cleanup process to which these sites are subject and how this complements the drinking water protection program, please visit the BWSC web page at <http://www.state.ma.us/dep/bwsc>. You may obtain site -specific information two ways: by using the BWSC Searchable Sites database at <http://www.state.ma.us/dep/bwsc/sitellst.htm> or you may visit the DEP regional office and review the site file. These files contain more detailed information, including cleanup status, site history, contamination levels, maps, correspondence and investigation reports, however you must call the regional office in order to schedule an appointment to view the file.

The table below contains the list of Tier Classified oil and/or Hazardous Material Release Sites that are located within your drinking water source protection area.

Table 1: Bureau of Waste Site Cleanup Tier Classified Oil and/or Hazardous Material Release Sites (Chapter 21E Sites) - Listed by Release Tracking Number (RTN)

RTN	Release Site Address	Town	Contaminant Type
3-0000223	Hartwell Rd	Bedford	Oil
3-0000588	180 Hartwell Rd	Bedford	Oil And Hazardous Material
3-0000698	312 Great Rd	Bedford	Oil
3-0001341	205 Burlington Rd	Bedford	Oil
3-0002407	358 Great Rd	Bedford	Oil
3-0002611	Hartwell Rd	Bedford	
3-0003526	353 Great Rd	Bedford	Oil
3-0003798	125 Middlesex Turnpike	Bedford	Oil
3-0011385	Hanscom Field West Ramp	Bedford	Oil
3-0015492	358 Great Rd	Bedford	Hazardous Material
3-0017283	4D Crosby Dr	Bedford	Oil
3-0018661	3 Plank St	Billerica	Oil And Hazardous Material
3-0000265	183 Bedford St	Burlington	Oil And Hazardous Material
3-0002367	181 Cambridge St	Burlington	
3-0014582	18 A St	Burlington	Hazardous Material
3-0017578	Bedford & Network Dr	Burlington	Oil
3-0003097	Hangar 1 Hanscom WIT East Coast Areotech	Lincoln	Oil
3-0018677	230 Hanscom Dr	Lincoln	Oil

For more location information, please see the attached map. The map lists the release sites by Release Tracking Number (RTN).